

INPLASY

Unlocking the Future: Bioprinting Salivary Glands— From Possibility to Reality

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ADMINISTRATIVE INFORMATION

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Review Stage at time of this submission - Completed but not published.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 31 May 2024 and was last updated on 31 May 2024.

INTRODUCTION

Review question / Objective The purpose of this literature review is to systematize the information about salivary gland bioprinting.

Rationale This review examines the current state of bioprinting technology, biomaterials, and tissue engineering strategies in creating functional implantable salivary gland constructs.

Condition being studied Salivary gland - Cell Source and Selection, Bioink Development, Bioprinting Technique, Structural Design.

METHODS

Search strategy Publications from 2018 to April 2024, databases: Google Scholar, PubMed, EBSCOhost, Web of Science. Terms: “3D

bioprinting”, “salivary gland”, “tissue regeneration”, “bioengineering”, “dental”.

Participant or population Not specified.

Intervention Bioprinting technology to fabricate functional salivary gland constructs.

Comparator Conventional treatments for salivary gland dysfunction.

Study designs to be included Systematic reviews, experimental studies, clinical trials.

Eligibility criteria Inclusion: Studies on bioprinting salivary glands; Exclusion: Case reports, abstracts, paid articles, conference papers.

Information sources Medical bibliographic databases: Google Scholar, PubMed, EBSCOhost, Web of Science.

Main outcome(s) Successful creation, implantation, and functioning of bioprinted salivary glands.

Additional outcome(s) Advances in bioprinting technology and biomaterials.

Data management Managed using reference management software.

Quality assessment / Risk of bias analysis PRISMA guidelines for systematic reviews.

Strategy of data synthesis Qualitative synthesis of study findings.

Subgroup analysis Different bioprinting techniques and materials.

Sensitivity analysis Not applicable.

Language restriction English.

Country(ies) involved Bulgaria.

Keywords bioprinting; dentistry; xerostomia; salivary glands; bioengineering; stem cells; vascularization; innervation.

Dissemination plans Publication in open access journals.

Contributions of each author

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